CONTAINER FOR DISPENSING WIPES

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Technical Field

The present invention relates to a container for dispensing wipes or sheet-like substrates which allows the user to locate, grasp and remove each wipe or similar substrate separately.

Background

Cleaning wipes being wet, semi wet or dry are know in the art. Equally other similar sheet-like substrates such as towels, sponges, pads, napkins, diapers etc are also known in the art. Such items have been packaged in a number of different ways. For example cleaning wipes, tissues, napkins etc are often packaged in a standard box, sometimes with a removable or hinged lid. Such packaging however raises the problem of locating, grasping and removing the uppermost substrate. This problem has been addressed in the prior art by stacking the substrates horizontally, interweaving each of the substrates with the preceding and subsequent substrate. By stacking the substrates in this way, when the user removes a substrate, the next substrate 'pops-up' to be easily grasped the next time. However this 'pop-up' dispensing system can only be successfully used when the substrate is sufficiently flexible and interweaving is possible.

An alternative dispensing system would be to stack the substrates vertically in a row, meaning that the substrates are stacked on an edge rather than on a face. However the Applicants have found that whilst this system can accommodate substrates that are less flexible, it is difficult to locate the edge of the next substrate, grasp and then remove it without also removing those substrates on either side. The user must therefore use both hand, one to remove the desired substrate and the second to restrain the remaining substrates. This is often not convenient, for example if the other hand is needed for another job or it is wet. In the situation where the substrate is a dishwashing wipe such as those described in copending European patent application number 00870281.3 (docket number CM2479F), contaminating stored wipes with water before they are used would detrimentally affect the performance of the wipe. Such dishwashing wipes would normally be stored near to a sink and thus close to water. It would therefore be preferred that stored wipes were protected from water contamination on storage.

It has therefore been the object of the present invention to provide a container for dispensing wipes singly without requiring the user to use both hands. It has also been the object of the present invention to provide a substrate dispensing container, which in addition to providing ease of dispensing, also protects the remaining substrates, especially from water contamination.

Summary of the Invention

According to the present invention there is provided a container comprising a top, 1 and bottom, 2 side walls opposing one another, front, 3 and back, 4 side walls opposing one another, left, 5 and right, 6 side walls opposing one another and a dispensing opening, 10, characterised in that the angle between the front, 3 and bottom, 2 side walls is greater than 90° but less than 180° and the dispensing opening, 10 is located in the top, 1 or front, 3 side walls or on the intersection between the top, 1 and front, 3 side walls.

Detailed Description of the Invention

The invention will now be described with reference to the accompanying diagrams which are not meant to be limiting:

Figure 1 is front perspective view of the container

Figure 2 is a rear perspective view of the container

Figure 3 a-c is a cross section view of the container showing the first spring embodiment

Figure 3 d is a perspective view of the container and spring of figure 3 a-c

Figure 4 a-c is a cross section view of the container showing the second spring embodiment

Figure 4 d is a perspective view of the container and spring of figure 4 a-c

Figure 5 is a cross section view of the container, comprising vertically stacked substrates

Figure 6 is a perspective view of the container, comprising a single substrate.

As shown in figures 1 and 2, the container comprises top, 1 and bottom, 2 side walls which oppose one another, front, 3 and back, 4 side walls that oppose one another and left, 5 and right, 6 side walls that oppose one another. As is described in more detail hereinafter, the front wall, 3 of the container is set at an angle versus the bottom side wall, 2 of greater than 90° but less than 180°. The container of the present invention is described by reference to the sides of the container when the container is in the upright position. The top side, 1 is on the top of the

container, the front side, 3 is visible by an observer, while the back side, 4 is hidden. The bottom side, 2 of the box is the side of the container which directly opposes the top side wall, 1 and which is in contact with the surface on which the container rests. The left side wall, 5 is that located on the left side of the front side wall, 3 and the right side wall, 6 is that located to the right of the front side wall, 3. Each side can have various shapes, but preferably has a rectangular or square shape with the exception of the left and right side walls. The overall proportions of the container may vary in order to adapt to different volumes of contents.

The container can be made from any suitable material. The container may preferably be made out of cardboard, more preferably plain or corrugated cardboard. In a particularly preferred embodiment the container is made from plastic. The container can be made entirely out of cardboard or plastic, or several materials can be used in combination. In a preferred aspect of the present invention, the container is made from a moisture protected material. Such moisture protected materials include those which are water droplet resistant or can be made water droplet resistant and those which prevent or reduce the transfer of atmospheric moisture. More preferably the moisture protected materials are resistant to water droplets and atmospheric moisture transfer. Preventing or reducing the level of water which comes into contact with the container and it's contents has two benefits; it reduces the detrimental effects moisture may have on the strength of the container and protects the contents from becoming wet. Thus in the case where the container is made out of moisture protected cardboard, a moisture protective barrier is applied to the cardboard. The moisture protective barrier may be a moisture protective coating which is applied to the box or a barrier film which is wrapped around the container, possibly even when it has been formed, filled and closed. Alternatively the moisture protective barrier may be provided by the fact that the cardboard is laminated during manufacture. Any suitable moisture barrier as known in the art may be applied. Preferred examples of moisture protective barrier materials are selected from the group consisting of UV varnish, polyethylene (PE), polyethylene terephthalate (PET), polyproylene (PP) or silicon treatments and mixtures thereof. Even preferably the moisture protected material is plastic, as discussed below.

Preferred plastics include polyethylene (PE), polypropylene (PP) and polyethylene terephthalate (PET). The plastic used may have any thickness which is suitable for forming the container. Thickness of the plastic may be a particular concern when the container is made by folding the

sides to form the container. In this instance it is preferred that the plastic should have thickness of between 50μm to 2mm. More preferably the plastic should have thickness of from 100μm to 1000μm and most preferably from 200μm to 600μm.

Alternatively the container, may be made from metal, more preferably a non-rusting metal. Such an embodiment however is probably expensive, hence it is also preferred that such a container would be reusable.

The container as described in the present application is formed by cutting a single or multiple pieces using a corresponding die cut. Depending on the shape of the die cut, the forming process can vary. In a first embodiment, the container is made out of separate pieces which are glued together. The pieces may be glued together directly to form the final container shape or are glued together to form a single piece which is then folded to form the container. In a second and preferred embodiment, the container is cut as a single piece and subsequently folded to form the final container shape. Cutting the container in a single piece is a simpler process than manufacturing from several pieces. In addition cost and waste are reduced.

The sides of the container once folded may be attached to one another to maintain the shape of the container by any known and suitable method. The sides may be attached to one another using glue. The glue can be applied in different ways, for instance, cold glue can be applied by rollers, or hot melt glue can be applied by glue guns, nozzles or pattern plates. Alternatively the sides can be attached to one another using an interlocking mechanism where the sides are locked together by interleaving of the sides of the container. An example of such interlocking mechanisms are butterfly locks wherein to form a side of the container, a first layer of material, usually plastic, comprises a hole and a second layer of material comprises two half moon-shaped cut outs. When forming the container, the second layer is folded on top of the first layer and the half moon-shaped cut outs are fed through the hole in the first layer, securing the first and second layer to one another.

Once the container is folded and formed, the container must be filled. The containers of the present invention may be filled using a method known in the art including the use of machinery or by hand.

Whilst the sides on the container may be at any angle to one another, the front side wall, 3 of the container is at an angle of greater than 90°, but less than 180° to the bottom side wall, 2. The remaining sides are preferably substantially 90° to each other. It is therefore envisaged that the top wall, 1 will be longer than the bottom wall, 2, resulting in a trapezoid shape container. In a preferred embodiment the angle between the front side wall, 3 and the bottom side wall, 2 is between 95° and 160°, more preferably 95° and 130°, most preferably 95° and 115°.

The container comprises a dispensing opening, 10 which may be located in the top, 1 or front, 3 side walls. The dispensing opening does not comprise the entire surface area of one side wall. For example the dispensing opening is not formed from a lid being removed from the top side of the container. Such an embodiment would not meet the dispensing needs of the present container, namely dispensing a single substrate at a time and protecting remaining substrates from outside conditions, for example water. Alternatively and more preferably, the dispensing opening may be located at the intersection of the top, 1 and front, 3 side walls. The dispensing opening, 10 may be of any suitable shape to allow the user to retract one substrate at a time. In a preferred embodiment the dispensing opening, 10 has shape as seen in figure 1. This preferred dispensing opening allows sufficient space for the substrate to be removed easily and for the user fingers to reach the substrate. In an alternative preferred embodiment the dispensing opening, 10 has shape similar to that shown in figure 1, but with the additional feature that the edge of the opening on the front side wall is extended further downward towards the intersection between the front and bottom side walls, 10 of figure 6. This preferred dispensing opening has the advantages described above with the additional advantage that the last few remaining substrates are more easily reached when they fall forward in the container (see figure 6).

In a preferred embodiment, the container comprises a substrate-dispensing aid which facilitates the removal of a substrate from the container. Said substrate-dispensing aid, may include an inclined bottom wall. The bottom wall itself may be inclined from the front to the back of the container. Alternatively, the bottom wall may be substantially horizontal, but the container comprises a second false bottom wall on the inside of the container which is inclined from the front to the back of the container. In either instance, substrates when stacked on the inclined surface will naturally tend to slide down the inclined surface toward the front of the box and the

uppermost edge of the substrate will tend to pivot forward toward the dispensing opening of the container. In this embodiment it is preferred that the inclined surface, where present, is made from plastic.

Alternatively, or in addition to the above, the substrate-dispensing aid may include a spring system. The spring is attached to the inside surface of the container and is designed to push the substrates forward. In a preferred aspect the bottom inclined surface and/or spring is made from the same material as is used to make the container. More preferably the bottom inclined surface and/or spring are made from the same single piece of material as used to make the container. Benefits of being able to cut the entire container, including the inclined surface and/or spring, include reduced cost, reduced waste and simplification of the cutting and forming process. Figures 3a, b, c and d and 4a, b, c and d provide diagrammatic explanation of two preferred spring systems. In both instances the spring (15) is provided by a length of resilient material which is attached to the internal surfaces of the container at one point only. Figure 3 a-d shows a spring system wherein the spring (15) is attached to the bottom back corner of the inside of the container. The spring comprises a length of material folded into a z-shape. Figure 3a shows the spring (15) in its compressed position when the container is filled with wipes. Figure 3b shows the position of the spring (15) when the container is half full of wipes, and in this position the spring (15) pushes the wipes at the front of the container forward toward the dispensing opening. Figure 3c shows the position of the spring (15) when only a few wipes remain in the container. In this position the proximal fold in the spring is fully extended. The distal fold of the spring remains partially compressed and thus the distal end of the spring pushes against the wipes, pushing them forward. Figure 3d shows a perspective view of the spring in the container. Figure 4 shows an alternative spring system wherein the spring (15) of resilient material is attached to the top back corner of the inside of the container. As before figure 4a shows the spring in compressed form, figure 4b and 4c shows the spring in partially compressed form, pushing the wipes forward. It is understood that the spring may take on any number of other shapes. Figure 4d shows a perspective view of the spring in the container.

In the situation where the substrates dispensed from the container are designed for multiple uses, it may be convenient to provide somewhere for the substrate to be stored in between uses. In one embodiment a substrate holder (20) is provided on one side of the container. The holder (20) can

be of any design or shape suitable for holding the substrate. The holder can be located on any of the side walls of the container. More preferably the holder (20) is located on the front, left or right side wall. In a preferred embodiment the holder consists of a strip of material, preferably the same material as is used to make the container. The strip of material is fixed at either end to the edge of adjacent side walls of the container (figure 1 or 2). In a preferred embodiment the holder is designed such that it can be pulled out from the box when needed and subsequently when no longer needed it can be pushed back in such that it is flush with the side wall of the container.

In a particularly preferred embodiment of the present invention the container is used to dispense substrates. The term 'substrates' as used herein is used to define the general class of products made from paper or paper-based, woven or nonwoven materials used for wiping surfaces. Examples of substrates include wet, dry or semi-dry wipes, for example hard surface cleaning or dishwashing wipes, napkins and diapers. The substrates can have any suitable shape, for example they may be rectangular, square, oval or round. The substrates can generally be described as having two opposing faces and edge(s) surrounding the perimeter of the faces. The substrates are packed into the container vertically, meaning that the substrates are packed on the edge with the faces of the substrate facing the front and back side walls of the container. When the container is fully packed with substrates the pressure on the substrates will force the uppermost edge of the substrates at the front of the container to fan or pivot forward, presenting an edge of the substrate that can be easily reached by the user. As the substrates are removed from the container the substrates pivot or fall forward toward the front of the container. Alternatively the substrates may be forced forward by the presence of the inclined bottom side or spring mechanism described above. In order to further improve dispensing of the substrates from the container it is preferred that the length (figure 5, A-A) of the bottom side (2) of the container is less than the height of the substrate, 30 (figure 5, B-B). The 'length' of the bottom side of the container is measured as the distance between the front and back side walls. The 'height' of the substrate is measured as the distance between the edges of the substrate in contact with the bottom and the top side wall of the container, when stacked vertically. By designing the container in this way we can prevent the possibility of substrates, 30 lying flat on the bottom surface of the container which would be difficult for the user to reach (figure 6).